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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/961,441	09/24/2001	Asad A. Khan	15-875	0812

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CLEVELAND, OH 44114-3108

EXAMINER

RAO, SHRINIVAS H

ART UNIT PAPER NUMBER

2814

DATE MAILED: 12/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/961,441

Applicant(s)

KHAN ET AL.

Examiner

Steven H. Rao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 09 October 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) 19-25 and 27-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-18 and 26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 27
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## **DETAILED ACTION**

### ***Priority***

The Application as currently filed does not claim priority from any previously filed patent Application. Therefore currently the earliest available filling date is the U.S. filling date namely September 24, 2001.

### ***Information Disclosure Statement***

Acknowledgment is made of receipt of Applicant's Information Disclosure Statement (PTO-1449) filled .

The references on PTO 1499 submitted on -- -- are acknowledged. All the cited references have been considered. However the foreign patents and documents cited by applicant are considered to the extent that could be understood from the abstract and drawings.

### ***Election/Restrictions***

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-18 and 26, are drawn to a Chiral nematic liquid crystal display ,  
classified in class 349, subclass 114.
- II. Claims 19-25, 27-34 are, drawn to a method of operating a liquid crystal

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display , classified in class 438, subclass 30.

Inventions Group I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)).

In the instant case the product as claimed can be used in a materially different process of using that product namely the device as claimed in the group I device claims need not use the reflected circularly polarized light with said material when said material exhibits said planar texture.

Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

During a telephone conversation with Mr. Paul A. Serbinowski ( 34,429) on a provisional election was made with traverse to prosecute the invention of Group I, claims 1-18 and 26

Affirmation of this election must be made by applicant in replying to this Office action.

Claims 19-25 and 27-34 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected

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invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 to 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maeda et al. ( U.S. Patent No.6,285,422, herein after Maeda) in view of Aso et al. ( U.S Patent No. 5,965,874, herein after Aso).

With respect to claim 1 Maeda describes A chiral nematic liquid crystal display, comprising:

- a) a chiral nematic liquid crystal material located between first and second substrates, said material including focal conic and planar textures that are stable in an absence of an electric field; ( Maeda col. 13, lines 40-45)
- b) an ambidextrous circular polarizer located adjacent to said first substrate;( Maeda col. 13 line 30)

c) . a translector having a first side adjacent to said polarizer and a second side; and a light source adjacent to said light second side. ( Abstract last two lines).

With respect to claim 2 describes the liquid crystal display of claim 1 wherein said planar texture has a circular polarization of a predetermined handedness. ( This claim is interpreted to mean right handed turn or left handed turn of the light through the circular polarizer as stated in the specification page 2 last line to page 3 line 1-5).

With respect to claim 3 describes the liquid crystal display of claim 1 wherein said light source is selectively energizeable to emit light through said translector. (Maeda abstract last 4 lines) .

With respect to claim 4 describes the liquid crystal display of claim 1 wherein said ambidextrous polarizer comprises a first quarter wave retarder and a second quarter wave retarder and a linear polarizer located between said first quarter wave retarder and said second quarter wave retarder. ( Maeda col. 25 lines 3 to 35, inherent that when a chiral nematic liquid crystal material is used to convert polarized light to linearly polarized light quarter wave retarders are present ).

With respect to claim 5 describes the liquid crystal display of claim 1 further comprising an alignment material on at least one of said first and second substrates. ( Maeda figure 11).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

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obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7-18 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maeda et al. ( U.S. Patent No. 6,285,422 herein after Maeda) as applied to claims 1-5 above and further in view of Aso et al. ( U.S. Patent No. 5,965,874, herein after Aso) . With respect to claims 7 and 8 Maeda describes the liquid crystal display of claim 5.

Maeda does not specifically describe wherein light reflected from said display has an S 3 stokes parameter greater than 0.75.

However Aso in col. 41-42 lines 50-55 describe wherein light reflected from said display has an S 3 stokes parameter greater than 0.75 to provide a method and an apparatus for obtaining the polarization characteristics of an optical transmission medium by evaluating the state of polarization of light and estimating the Jones matrix describing the birefringence and polarization mode coupling of transmission medium all of which allows to carefully control and ensure optimum light intensity.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to include Aso's teachings of light reflected from said display has an S 3 stokes parameter greater than 0.75 in Maeda's device for obtaining the polarization characteristics of an optical transmission medium by evaluating the state of polarization of light and estimating the Jones matrix describing the birefringence and polarization mode coupling of transmission medium all of which allows to carefully

control and ensure optimum light intensity. ( Aso cols. 2 to 14).

With respect to claim 6 describes the liquid crystal display of claim 5 wherein said alignment material has a pretilt angle of about 21 ° from the substrate. ( Maeda col. 9 lines 35 to 55).

It is noted that the specification contains no disclosure of either the critical nature of the claimed dimensions of any unexpected results arising therefrom. Where patentability is said to be based upon particular chosen dimensions or upon another variable recited in a claim, the Applicant must show that the chosen dimensions are critical. In re Woodruff, 919 F.2d. 1575, 1578, 16 USPQ 2d 1934, 1936 ( Fed. Cir. 1990).

With respect to claims 9 and 10 describes the liquid crystal display of claim 1 further comprising a rubbed alignment material on both of said first and second substrates. ( well known in the art).

With respect to claim 11 describes the liquid crystal display of claim 1 wherein said light source has a spectral distribution that matches a reflection spectrum of the display. ( inherent property of the material used )

With respect to claim 12 describes a chiral nematic liquid crystal display, comprising:

a) a chiral nematic liquid crystal material located between first and second substrates, said material including a planar texture having a circular polarization of a predetermined handedness and a focal conic texture that are stable in an absence of an electric field; ( Maeda col. 13, lines 40-45).

b) a first quarter wave retarder located adjacent to said first substrate; ( Maeda col. 25



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lines 3 to 35, inherent that when a chiral nematic liquid crystal material is used to convert polarized light to linearly polarized light quarter wave retarders are present ).

c) a linear polarizer located adjacent to said first quarter wave retarder; ;( Maeda col. 13 line 30).

d) a second quarter wave retarder located adjacent to said linear polarizer; ( Maeda col. 25 lines 3 to 35, inherent that when a chiral nematic liquid crystal material is used to convert polarized light to linearly polarized light quarter wave retarders are present ).

e) a translector having a reflective side adjacent to said secondquarter wave retarder and a light transmitting side; (Maeda abstract last 4 lines) .

and f) a light source adjacent to said transmitting side, said light source

being selectively energizeable to emit light through said translector. (Maeda abstract last 4 lines) .

With respect to claim 13 Maeda describes the liquid crystal display of claim 12 wherein said light source has a spectral distribution that matches a reflection spectrum of the display. ( well known in the art) .

With respect to claim 14 Maeda describes the liquid crystal display of claim 12 further comprising an alignment material on at least one of said first and second substrates. (Maeda figure 11).

With respect to claim 15 Maeda describes the liquid crystal display of claim 14

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wherein said alignment material has a pretilt angle of about  $21^{\circ}$  from the substrate. ( Maeda col. 9 lines 35 to 55).

With respect to claim 16 Maeda describes the liquid crystal display of claim 14 wherein light reflected from said display has an S3 stokes parameter greater than 0.75. ( rejected for same reasons as stated under claims 7 and 8 above).

With respect o claim 17 Maeda describes the liquid crystal display of claim 14 wherein light reflected from said display has an S3 stokes parameter greater than 0.90. ( rejected for same reasons as stated under claims 7 and 8 above).

With respect to claim 18 Maeda describes the liquid crystal display of claim 12 further comprising a rubbed alignment material on at both of said first and second substrates. ( well known in the art).

With respect to claim 26 Maeda describes a chiral nematic liquid crystal display, comprising: a) a chiral nematic liquid crystal material located between first and second substrates, said material including focal conic and planar textures that are stable in an absence of an electric field, ( Maeda col. 13, lines 40-45) said liquid crystal material reflects light from said display that has an S3 stokes parameter greater than 0.75. ( rejected for same reasons as stated under claims 7 and 8 above).

b) an ambidextrous circular polarizer located adjacent to said first substrate; ;( Maeda col. 13 line 30)

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c) a transflector having a first side adjacent to said polarizer and a second side; (Maeda abstract last 4 lines) .

and d) a light source adjacent to said light transmitting side.

e) reflecting said circularly polarized light with said material when said

material exhibits said planar texture; (Maeda abstract last 4 lines) .

and .

f) absorbing said light reflected by said material when said material

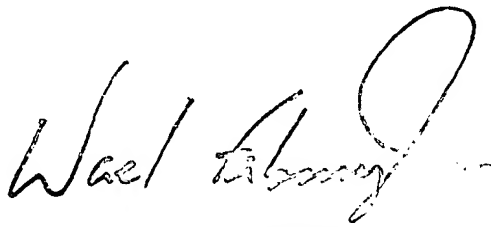
exhibits said planar texture. ( inherent in a transreflector, Maeda figure 11, etc.)

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Steven H. Rao whose telephone number is (703) 306-5945. The examiner can normally be reached on Monday- Friday from approximately 7:00 a.m. to 5:30 p.m.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0956. The Group facsimile number is (703) 308-7724.

Steven H. Rao

Patent Examiner

  
SUPERVISORY PRIMARY EXAMINER  
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